BUS A171: DATA VISUALIZATION: HARNESSING THE POWER OF BIG DATA FOR BUSINESS/MARKETING/ ENTREPRENEURSHIP

Item	Value
Curriculum Committee Approval Date	12/20/2020
Top Code	059900 - Other Business and Management
Units	1.5 Total Units
Hours	27 Total Hours (Lecture Hours 27)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S), • Pass/No Pass (B)

Course Description

This course provides an introduction as well as hands-on experience in data visualization. The course introduces students to design principles for creating meaningful displays of quantitative and qualitative data to facilitate business and marketing decision-making. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Students will be able to create elements of a presentation that make for an effective data visualization.
2. Students will be able to select appropriate data and design visual representation of that data to identify problems, situations, or phenomenon.

Course Objectives

- 1. Identify the key design principles and techniques for visualizing data.
- 2. Develop the fundamentals of communication and alignment around concepts that are required for effective data presentation.
- 3. Use at a introductory level the available software tools that can be used for data visualization.
- 4. Identify, understand, analyze, prepare, and present effective visualizations on a variety of topics.

Lecture Content

Introduction into Data Visualization What is Data Visualization and why is it important. Visual Perception Brief History of Data Visualization Design Principles – Pre-attentive Attributes and Thinking Systems Fundamentals The Fundamental of Data Visualization Compare and Contrast Tables Data Quality Quantitative and Qualitative Statistics Connecting to data Types of Charts Bar Charts Pie Charts Scatter Plots Bubble Charts Other types of Charts Correlation Color and Dashboard Design The Use of Color in Data Visualization Color Vision Deficiency Exploratory vs. Explanatory Dashboard Design Story Points Typography Typography and Data Visualization Design Infographics Interactive Visualization Mapping Data

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- DE Online Lecture (02X)

Instructional Techniques

This course will utilize a combination of lecture, hands-on guided laboratory assignments, classroom/discussion student interactions, problem solving, quizzes, tests, and troubleshooting assignments to achieve the goals and objectives of this course. All instructional methods are consistent across all modalities.

Reading Assignments

Readings from assigned text, handouts, and websites (10 hours)

Writing Assignments

Students will spend a total of 22 hours on: A. Dashboard project B. Presentations using data visualization tools C. Course reflections

Out-of-class Assignments

Students will spend a total of 22 hours on: A. Comparing and contrasting data visualization types B. Data visualization assignment C. Data visualization with technical tools D. Manipulating data

Demonstration of Critical Thinking

Students will evaluate assignments and projects of other students as well as reflecting on their own work to improve an outcome

Required Writing, Problem Solving, Skills Demonstration

Skills will be demonstrated during presentations throughout the course. In addition, student will create a dashboard presenting information in number and graphic form based on data either acquired by the students or from a given data set.

Eligible Disciplines

Business: Masters degree in business, business management, business administration, accountancy, finance, marketing, or business education OR bachelors degree in any of the above AND masters degree in economics, personnel management, public administration, or Juris Doctorate (J.D.) or Legum Baccalaureus (LL.B.) degree OR bachelors degree in economics with a business emphasis AND masters degree in personnel management, public administration, or J.D. or LL.B. degree OR the equivalent. Masters degree required.

Textbooks Resources

1. Required Wexler, S.. The Big Book Dashboards: Visualizing Your Data Using Real-World Business Scenarios, ed. Wiley, 2017 2. Required Few, S.. Show Me the Numbers, Designing Tables and Graphs to Enlighten, ed. Analytics Press, 2012 Rationale: Top textbook used by colleges and universties with data science programs 3. Required Knaflic, C.. Storytelling with Data: A Data Visualization Guide for Business Professionals, ed. Wiley, 2015 Rationale: Top textbook used by colleges and universties with data science programs

Software Resources

1. Tableau Public. Tableau, Recent ed. The software in free for educators and students 2. MS Excel. Microsoft, Latest ed. 3. Google Sheets. Google, Latest ed. Free software